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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,931	11/06/2003	Tim A. Matus	ITW7510.067	2930

33647 7590 08/04/2008
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EXAMINER

PASCHALL, MARK H

ART UNIT	PAPER NUMBER
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3742

NOTIFICATION DATE	DELIVERY MODE
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08/04/2008

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/605,931
Filing Date: November 06, 2003
Appellant(s): MATUS, TIM A.

Kevin R. Rosin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 06-19-2007 appealing from the Office action mailed 02-24-2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,856,647	Luo	01-1999
4,967,055	Raney et al	10-1990

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luo in view of Raney et al. Claims are unpatentable for the same reasons set forth on pages 2-3 in the previous office action. As set forth in this rejection, Luo teaches a plasma torch including a shield cup, electrode swirl ring, nozzle or tip, as depicted. The claims define that the components such as cup, electrode and tip are connected to form a one-piece assembly to the torch body, not taught in the Luo system, which teaches multiple parts of the assembly to be assembled in order, during torch assembly. In this respect the patent to Raney et al is applied for teaching that the more parts the operator has to assemble, the greater the likelihood for improper assembly, which is a safety hazard. See column 6, lines 45-65. Raney et al thus teach that the parts can form an assembly, which can then be secured to the torch head. Raney et al in the first paragraph of column 6, mention that the electrode and swirl ring can be press fit together to form an integral part for assembly. Column 7 in Raney et al mentions that the electrode, tip (nozzle) and skirt (shield cup) can be nested together as an assembly. In view of this teaching the artisan would have found proper motivation to assemble

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these parts for pre-assembly, with the benefit of enhanced torch assembly, and assemble the torch parts in Luo accordingly. Use of particular materials for the components is considered a routine choice, dependent on the end use of the torch components, such as power levels used and gases used. Use of differing components for the pre-assembled unit, as set forth in the dependent claims, is likewise a matter of choice for the artisan, since the end use of the device would direct which components are more likely to be changed most frequently.

(10) Response to Arguments

It should be noted that Luo teaches the basic torch, as claimed, but does not teach combining multiple torch elements into an integral element for ease of parts replacement. As set forth in column 7 in Raney in the prior rejection, the electrode, tip/nozzle and skirt/cup can be nested and connected to the torch as an assembly. Raney et al teach that combining of torch parts into integral components is beneficial. It is clear that since Luo teaches the basic torch structure claimed in the instant invention, and since Raney et al teach as specified above that combining multiple; torch elements into larger integral components is beneficial.

Appellant's arguments on page 4 in the brief advance that the criteria for obviousness have not been met by the Examiner. Proper motivation for the combination of

references, reasonable expectation of success and teaching of all of the claim limitations must be met. The Examiner disagrees with the Appellant's arguments for the reasons advanced below. Claim 1 claims a plasma torch assembly having three components, a shield cup, an electrode and a nozzle (which is also referred to as a tip). The electrode is integrally connected to the tip and the shield cup is integrally connected to the electrode. It is submitted that Luo teaches in Figure 2 that a shield or drag cup 138 is connected to an tip or nozzle 102 and also connected to electrode 50. When the torch is assembled and functioning these elements are construed as an integral connection, barring further description in the claims of just what an integral connection comprises. Applicant's claims are silent as to an integral assembly steps or language depicting the same. Appellant's arguments are directed more to the disclosure of the invention, not what is claimed in the invention. The claimed invention is directed to a plasma torch apparatus comprising a nozzle, an electrode and a shield cup. As described above, all of the elements are taught in the Luo patent. As described above, these elements do construe an integral assembly, barring further description of the same in the claimed subject matter. For the purpose of giving patentable weight to Appellant's claim language and arguments, the patent to Raney et al was applied for teaching in column 8 first paragraph, that , "This unique stacking and nesting arrangement of the front end assembly 50 provides a significant measure of protection over the prior art. In conventional prior art designs, the four-part front assembly can be improperly assembled in such a way that the electrode remains hot and can result in electrocution for severe injury to a worker who may touch the tip in an effort to find out

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why the apparatus is malfunctioning.” Paragraph 8 goes on to describe, “assume that a conventional three-part torch is mis-assembled without the electrode or tip..... could result in shock to the operator”. It is submitted that the safety to the operator is of greatest importance and Raney et al clearly recognize this concept and provide a pre-assembled or integral nested unit of the front end assembly, to enhance the torch safety. It is submitted that this teaching provides one of ordinary skill in torch assemble to form the front end assembly in Luo in a pre-assembled manner to obviate the danger of electrocution for the operator of the torch when changing these consumable elements during operation of the torch and also ease the changing of torch components. Clearly, the first criteria for obviousness has been met, in the combination of references as applied. Appellants should note that the tips or nozzles set forth in the applied patents also function as electrodes during starting and operation of the torch.

Appellant’ remarks on page 6 in the brief state that Raney et al, “expressly discloses that each of the three separate parts of the front end assembly is individually removable, and further, that in-field assembly of the stacked consumable assembly is allowed even with omission of one or more of the three parts of the assemble. This is in stark contrast to the configuration set forth by the current invention which calls for an integral one-piece consumable...” . This is in stark contrast to the configuration set forth by the current invention which calls for an integral one-piece consumable...” Appellant’s claims are directed to a front end assembly that can be attached to the torch in an assembled manner. Raney et al teach a front end assembly for a plasma torch that can be connected to the torch in a cluster of nested components. Clearly Raney et

al teach the claimed subject matter, since the claims are silent as to how the nested components are assembled during the pre-assembly. No mention is made of how these parts are manufactured in a one-piece assembly; mention only made that the assembly components are integrally assembled to each other. it is submitted that during the pre-assembly of the Raney et al components, these components are integrally assembled to each other to form a nested pre-assembly component, and these nested elements form an integral, pre-assembly, as claimed. The present claims are silent as to how the components are formed as an integral unit, such as by welding or press-fit assembly. In

fact the present claim limitations represent an apparatus for a torch, not a method of assembling the torch. Appellant's claims do not preclude the consumable nested torch components being assembled together in a nested, integral manner, before connection to the torch as an assembly. Note that all of the torch components are taught, in Luo, as modified by Raney et al, and thus the second criteria for obviousness has been satisfied. Appellant's instant disclosure mention use of a press fit to form the assembly, see page 11. Note that Raney et al mention use of a press fit also to form the assembly.

With respect to the final criteria for obviousness, clearly the assembly of Luo as modified could be connected to the torch as a component assembly, as suggested by Raney et al, in light of the benefits of such modification, clearly recognized by Raney et al, which teaches that both ease of manufacturing and enhanced operator safety can occur by forming the consumable components into a nested pre-assembly unit. Clearly, success of such modification would ensue, since all of the claimed components are set forth in Raney et al and in Luo, and use of pre-assembly of these components in lieu of

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separate assembly, piece by piece, is taught by the Raney et al patent as conventional.

Conclusion

In conclusion, the main argument presented in the appeal brief contends that Raney et al teach separate components pre-assembled before attachment to the plasma torch, as one unit, rather than teaching an integral connection. It is submitted that these components of a torch, formed into an integral assembly before attachment to the torch, is construed as an assembly comprising components integrally attached to each other to form a pre-assembled unit. The claims are silent as to just what integral connection comprises. The final rejection of claims 1-27 is proper and should be sustained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Mp

/Mark H Paschall/

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